

## CLAIMS

### WHAT IS CLAIMED IS:

1. An agent telephone system for use in a transaction processing system, the transaction processing system configured to couple an incoming telephone call with an agent of the agent telephone system and to route the incoming telephone call over one of a plurality of communication networks, the communication networks utilizing differing communication protocols, the agent telephone system comprising:

a microprocessor;

memory operatively coupled to the microprocessor;

at least one agent transducer for transmission and reception of audio information, respectively;

a conversion device configured to operatively couple at least one transducer to the microprocessor;

an input multiplexer operatively coupled to the microprocessor, the microprocessor configured to control selection of one of a plurality of input lines of the multiplexer; and

the plurality of network interfaces configured to operatively couple a selected one of the plurality of networks to the corresponding input line of the multiplexer so as to permit communication between the caller and the agent of the agent telephone system over the selected network.

2. The agent telephone system according to claim 1 wherein the plurality of communication networks are selected from the group consisting of an Ethernet network, USB network, H.323 protocol network, SIP network, MGCP network, VoFR network, VoATM network, TDM network, T1 network, PSTN network, BRI network, POTS network, 2G wireless network, 2.5G wireless network, and 3G wireless network.

3. The agent telephone system according to claim 1 wherein at least one of the plurality of network interfaces are selected from the group consisting of an Ethernet network interface, USB network interface, H.323 protocol network interface, SIP network interface, MGCP network interface, VoFR network interface, VoATM network interface, TDM network interface, T1 network interface, PSTN network interface, BRI network interface, POTS network interface, 2G wireless network interface, 2.5G wireless network interface, and 3G wireless

network interface.

4. The agent telephone system according to claim 1 wherein at least one of the communication networks is a packet-switched based network.

5. The agent telephone system according to claim 1 wherein at least one of the communication networks is a circuit-switched based network.

6. The agent telephone system according to claim 1 wherein upon detection of a failure of a first communication network through which the incoming telephone call is coupled to the agent telephone, and the microprocessor issues a control signal to the multiplexer to route a reconnected incoming telephone call from a second communication network so as to reestablish communication.

7. The agent telephone system according to claim 6 wherein the agent telephone system detects a failure of a selected one of the plurality of communication networks by loss of a link status indication.

8. The agent telephone system according to claim 6 wherein the agent telephone system detects a failure of a selected one of the plurality of communication networks by loss of a keep-alive indication.

9. The agent telephone system according to claim 6 wherein the first and second communication networks utilize different communication protocol.

10. The agent telephone system according to claim 1 further including a display operatively coupled to the microprocessor.

11. The system according to claim 1 further including a communication network defined by a computer having a sound card therein, the computer operatively coupled between the transaction processing system and the agent telephone, the sound card configured to digitize voice communication.

12. The system according to claim 1 further including a communication network defined by a computer having a USB circuit therein, the computer operatively coupled between the transaction processing system and the agent telephone, the USB circuit configured to facilitate transmission and reception of serial data.

13. An agent telephone system for use in a transaction processing system, the transaction processing system configured to couple an incoming telephone call with an agent of

the agent telephone system and to route the incoming telephone call over one of a plurality of communication networks, the plurality of communication networks utilizing differing communication protocols, the agent telephone system comprising:

a microprocessor;

memory operatively coupled to the microprocessor;

an agent microphone and agent speaker for transmission and reception of audio information, respectively;

a conversion device configured to operatively couple the agent microphone and the agent speaker to the microprocessor;

an input multiplexer operatively coupled to the microprocessor, the microprocessor configured to control selection of one of a plurality of input lines of the multiplexer;

the plurality of network interfaces configured to operatively couple a selected one of the plurality of networks to a corresponding input line of the multiplexer so as to permit communication between the caller and the agent of the agent telephone system over the selected network; and

wherein after detection of a failure of a first communication network through which the incoming telephone call is coupled to the agent telephone system, the microprocessor issues a control signal to the multiplexer to route a reconnected incoming telephone call from a second communication network so as to reestablish communication between the caller and the agent, the first and second communication networks utilizing different communication protocol.

14. The agent telephone system according to claim 13 wherein at least one of the plurality of communication networks are selected from the group consisting of an Ethernet network, USB network, H.323 protocol network, SIP network, MGCP network, VoFR network, VoATM network, TDM network, T1 network, PSTN network, BRI network, POTS network, 2G wireless network, 2.5G wireless network, and 3G wireless network.

15. The agent telephone system according to claim 13 wherein the plurality of network interfaces are selected from the group consisting of an Ethernet network interface, USB network interface, H.323 protocol network interface, SIP network interface, MGCP network interface, VoFR network interface, VoATM network interface, TDM network interface, T1 network interface, PSTN network interface, BRI network interface, POTS network interface, 2G

wireless network interface, 2.5G wireless network interface, and 3G wireless network interface.

16. The agent telephone system according to claim 13 wherein at least one of the communication networks is a packet-switched based network.

17. The agent telephone system according to claim 13 wherein at least one of the communication networks is a circuit-switched based network.

18. The agent telephone system according to claim 13 wherein the agent telephone system detects the failure of the first communication network by loss of a link status indication.

19. The agent telephone system according to claim 13 wherein the agent telephone system detects a failure of the first communication networks by loss of a keep-alive indication.

20. The agent telephone system according to claim 13 wherein the first and second communication networks utilize different communication protocol.

21. The system according to claim 13 further including a communication network defined by a computer having a sound card therein, the computer operatively coupled between the transaction processing system and the agent telephone, the sound card configured to digitize voice communication.

22. The system according to claim 13 further including a communication network defined by a computer having a USB circuit therein, the computer operatively coupled between the transaction processing system and the agent telephone, the USB circuit configured to facilitate transmission and reception of serial data.

23. A method for providing communication paths for an incoming telephone call of a transaction processing system with and agent of an agent telephone system, the transaction processing system configured to route the incoming telephone call to the agent telephone system over one of a plurality of communication networks, the plurality of communication networks utilizing differing communication protocols, the method comprising the steps of:

providing an agent telephone system having a microprocessor, and operatively coupling to the microprocessor to a memory;

proving at least one transducer for transmission and reception of audio information, respectively;

operatively coupling the at least one transducer to the microprocessor through a conversion device;

controlling selection of one of a plurality of input lines of the multiplexer, the input lines of the input multiplexer operatively coupled to the microprocessor;

providing a plurality of network interfaces configured to operatively couple a selected one of the plurality of networks to a corresponding input line of the multiplexer so as to permit communication between the caller and the agent of the agent telephone system over the selected network; and

detecting a failure of a first communication network through which the incoming telephone call is coupled to the agent telephone and thereafter issuing a control signal to the multiplexer to route a reconnected telephone call from a second communication network so as to reestablish communication between the caller and the agent, the first and second communication networks utilizing different communication protocol.

24. The agent telephone system according to claim 23 wherein the plurality of communication networks are selected from the group consisting of an Ethernet network, USB network, H.323 protocol network, SIP network, MGCP network, VoFR network, VoATM network, TDM network, T1 network, PSTN network, BRI network, POTS network, 2G wireless network, 2.5G wireless network, and 3G wireless network.

25. The agent telephone system according to claim 23 wherein the plurality of network interfaces are selected from the group consisting of an Ethernet network interface, USB network interface, H.323 protocol network interface, SIP network interface, MGCP network interface, VoFR network interface, VoATM network interface, TDM network interface, T1 network interface, PSTN network interface, BRI network interface, POTS network interface, 2G wireless network interface, 2.5G wireless network interface, and 3G wireless network interface.

26. The agent telephone system according to claim 23 wherein at least one of the communication networks is a packet-switched based network.

27. The agent telephone system according to claim 23 wherein at least one of the communication networks is a circuit-switched based network.

28. The agent telephone system according to claim 23 wherein the agent telephone system detects the failure of the first communication network by detecting a loss of a link status indication.

29. The agent telephone system according to claim 23 wherein the agent telephone

system detects the failure of the communication network by detecting a loss of a keep-alive indication.

30. The agent telephone system according to claim 23 wherein the first and second communication networks utilize different communication protocol.

31. The agent telephone system according to claim 23 further including a display operatively coupled to the microprocessor.

32. The system according to claim 23 further including a communication network defined by a computer having a sound card therein, the computer operatively coupled between the transaction processing system and the agent telephone, the sound card configured to digitize voice communication.

33. The system according to claim 23 further including a communication network defined by a computer having a USB circuit therein, the computer operatively coupled between the transaction processing system and the agent telephone, the USB circuit configured to facilitate transmission and reception of serial data.

34. An agent telephone system for use in a transaction processing system, the transaction processing system configured to couple an incoming telephone call with an agent of the agent telephone system and to route the incoming telephone call over one of a plurality of communication networks, the communication networks utilizing differing communication protocols, the agent telephone system comprising:

a means for computing;

memory operatively coupled to the means for computing;

transducer means for transmission and reception of audio information;

a conversion device configured to operatively couple the agent microphone and the agent speaker to the microprocessor;

an input multiplexer operatively coupled to the microprocessor, the microprocessor configured to control selection of one of a plurality of input lines of the multiplexer; and

the plurality of network interfaces configured to operatively couple a selected one of the plurality of networks to the corresponding input line of the multiplexer so as to permit communication between the caller and the agent of the agent telephone system over the selected network.